REMARKS

Claims 1-11 and 13-36 are pending in the present application.

In the office action mailed January 24, 2006 (the "Office Action"), the Examiner rejected claims 1-11 and 13-36 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,867,166 to Myhrvold *et al.* (the "Myhrvold patent") in view of U.S. Patent No. 6,278,434 to Hill *et al.* (the "Hill patent").

Claims 1, 10, 18, 24, 27, and 33, have been amended to more clearly recite the subject matter claimed as the invention. It will be apparent from the amendments, and the comments below, that the amendments were made independent of the cited references. The previously mentioned amendments do not narrow or further limit the scope of the invention as recited by the respective unamended claim. Generally, the amendments make explicit what is implicit in the claim, add language that is inherent in the unamended claim, or merely redefine a claim term that is previously apparent from the description in the specification. Consequently, the amendments should not be construed as being "narrowing amendments," because these amendments were not made for a substantial reason related to patentability.

The Myhrvold patent describes a system and method for generating image data using "gsprites," which is based on the concept of "sprites." A sprite is generally a rectangle of pixels for a two-dimensional ("2D") object that can be layered onto a non-moving background to efficiently create the impression of object motion. *See* col. 4, lines 15-33. The Myhrvold patent takes the idea and applies it more generally by mapping visible non-sprite three-dimensional ("3D") objects to a gsprite. *See* col. 14, lines 3-12. The gsprite, and consequently the mapped object, are divided into "chunks." *See* col. 14, lines 45-55 and col. 31, lines 25-35. The chunks of a gsprite are then rendered separately to provide a rectangle of pixels. The chunks of pixels can be combined to create a larger gsprite to cover a larger object. The pixel chunks representing the object can then be treated as conventional graphics sprites to provide an image.

The Hill patent describes a system and method for displaying text on an LCD display which takes advantage of the independent control of red, green blue ("RGB") pixel sub-components of a standard LCD screen pixel. Typically, a single pixel of an LCD display is divided into its RGB pixel sub-components in either vertical or horizontal stripes. *See* col. 2, lines 59-67. The RGB pixel sub-components are also typically treated as a single pixel element, that is, the RGB pixel sub-components are switched "on" or "off" together. The Hill patent,

however, takes advantage of independent control of the RGB pixel sub-components (each pixel sub-component having intensity between 0 and 255) to provide approximately three-times the pixel resolution. *See* col. 3, lines 10-21 and col. 17, line 48-col. 18, line 17. The increase in pixel resolution is realized by individually controlling the pixel sub-components intersecting an edge of a visible object. The RGB sub-components can be switched on or off separately to provide finer resolution than switching on or off all of the sub-components together, as is done conventionally. The Hill patent further describes the weighting of the each of the RGB pixel sub-component intensities to accommodate the inherent sensitivities of the human eye to red, green and blue colors.

Claims 1, 10, 18, 24, and 33 are patentable over the Myhrvold patent in view of the Hill patent because the combined teachings do not teach or suggest the combination of limitations recited by the respective claims.

For example, claim 1 recites a method for calculating values for pixels of an image that includes generating pixels for geometric primitives by taking sample values at first and second sub-pixel positions and combining the sample values to generate values for pixels representing the primitive positioned at the first pixel position.

The Examiner has cited the Myhrvold patent as teaching all of the limitations except for pixel and sub-pixel positions, *see* the Office Action at page 4, analogizing the division of a gsprite into chunks and the rendering of the chunks into pixels to the shifting of each of the primitives to sub-pixel locations and rendering each of the primitives. The process of assigning a visible object to a gsprite, dividing the gsprite into chunks, and then rendering the chunks into pixels is unrelated to the shifting and rendering recited in claim 1. This is illustrated by the fact that the chunks into which a gsprite are divided are defined by pixel dimensions, and not by the geometric primitives used to form an object. As described in the Myhrvold patent, the primitives of the visible object are divided among the chunks of the gsprite. *See* col. 31, lines 41-55. Generation of the pixels in the Myhrvold patent are not based on a primitive, but on the pixel boundaries of an object mapped to the gsprite. As shown in Figures 15A-15C, a bounding box defining the object to be mapped to a gsprite is expanded to fit a pixel chunk boundary. The chunks themselves are selected based on a pixel boundary independent of the primitives making up the object. The rectangular chunks are then tiled to provide a gsprite representation of an object, which can then be manipulated as conventional graphics sprites. In contrast, the method

recited in claim 1 discusses rendering at the primitive level. A set of pixels representing the primitive are generated at each sub-pixel location. The pixels of the multiple sets are then combined to provide pixels for the primitive.

As indicated by the Examiner, the Myhrvold patent fails to disclose taking sample values of a primitive, or a chunk for that matter, at multiple sub-pixel positions. The Hill patent has been cited as teaching these limitations. However, as previously discussed, the Hill patent describes the use of RGB pixel sub-components to improve apparent resolution. There is no discussion of using the pixel sub-components as sample locations to which a primitive is shifted and sampled. The pixel sub-components are used as independently controllable "pixels" that can be turned on or off with different levels of intensity (between 0 and 255, as known). The scan conversion process described in the Hill patent does not shift a visible object to the locations of the different pixel sub-components. On the contrary, during the scan conversion, the object to be displayed is positioned in the field of pixels, and for the pixels intersecting the edge of the object, it is determined which of the RGB pixel sub-components should be switched on or off to provide finer edge resolution. Shifting an object, or a primitive, as recited in the claims, is unlikely because this would prevent determining which of the RGB pixel sub-components should be switched on or off at the edge of the object. That is, if the object is shifted from one location to another, the particular RGB pixel sub-components that should be switched on or off for the pixels at the edge will be different at each shifted location because the edge of the object moves relative to the pixel sub-components. As a result, deciding which pixel sub-components should be switched on or off with the object shifted to various sub-pixel locations would be impossible.

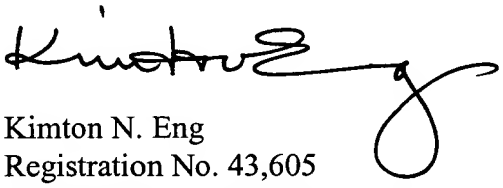
Claims 10, 18, 24, and 33 also recite limitations as claim 1 that provide shifting and rendering pixels at the geometric primitive level at multiple sub-pixel positions. The resulting sets of pixels are then combined to provide the values for pixels of the geometric primitive. The combined teachings of the Myhrvold and Hill patents do not teach or suggest the combination of limitations recited in the respective claims. As previously discussed with reference to claim 1, the Myhrvold patent does not disclose rendering at the geometric primitive level, or shifting the chunks for rendering, and the Hill patent fails to describe sub-pixel positions at which a primitive is shifted and sampled. The chunks described in the Myhrvold patent do not correspond to geometric primitives nor are the chunks shifted to obtain sample locations. The RGB pixel sub-components described in the Hill patent are not sub-pixel positions to which a

primitive, or visible object, are shifted nor are they sample locations at which sample values are obtained.

For the foregoing reasons, claims 1, 10, 18, 24, and 33 are patentable over the Myhrvold patent in view of the Hill patent. Claims 2-9, which depend from claim 1, claims 11, and 13-17, which depend for claim 10, claims 19-23, which depend from claim 18, claims 25-32, which depend on claim 24, and claims 34-36, which depend on claim 33 are similarly patentable based on their dependency from a respective allowable base claim. Therefore, the Examiner's rejection of claims 1-11 and 13-36 under 35 U.S.C. 103(a) should be withdrawn.

All of the claims pending in the preset application are in condition for allowance. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
DORSEY & WHITNEY LLP



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